

## ABSTRACT

A system and method are disclosed for producing high purity colloidal silica by the steps of providing a quantity of potassium silicate; subjecting the quantity of potassium silicate to an ion exchange process to remove a first portion of potassium therefrom to 5 produce a quantity of colloidal silica; and subjecting the quantity of colloidal silica to ultrafiltration to remove a portion of sodium therefrom, producing a quantity of high purity colloidal silica. High purity potassium hydroxide may also be prepared by regenerating the ion exchange resin with an acid to produce a quantity of potassium salt, which may be further purified by evaporation, crystallization, then further processed by electrodialysis and/or 10 electrolysis.

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